Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
The Establishment of Policies and	)	IB Docket No. 99-81
Service Rules for the Mobile-Satellite	)	RM-9328
Service in the 2 GHz Band	)	
	)	

COMMENTS OF GLOBALSTAR, L.P.

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EXECUTIVE SUMMARY

The Commission should adopt rules and policies for 2 GHz MSS that allow the competitive environment for Mobile-Satellite Service to develop without unnecessary regulatory intervention. The difficult issues to be resolved in this proceeding primarily involve the licensing of 2 GHz MSS systems. Thus, while substantial attention is needed at the outset to ensure the proposed systems have the opportunity to compete fairly, only those rules and policies clearly necessary to promote competitive service offerings should be adopted.

The Commission should adopt its proposed policies of allowing both geostationary and nongeostationary systems to be licensed at 2 GHz and of requiring specific geographic coverage patterns for all systems to ensure maximum use of spectrum. There is no allocation for AMS(R)S in the 2 GHz MSS spectrum; therefore, no special provision should be made for AMS(R)S in the 2 GHz MSS bands. In keeping with a market-based approach to MSS, each licensed system should have the flexibility to provide the services it deems marketable as long as the parameters of the intrasystem coordination process apply equally to all and give no one system any particular advantage to accommodate a specialized service.

The 2 GHz MSS applicants should not be required to meet a financial standard. The existing DOMSAT standard does not account for the financial plans that 2 GHz MSS systems are likely to require to complete construction, launch and operation of the systems. Rather, the Commission should adopt and enforce

stringent implementation milestones for these systems to guard against spectrum warehousing and "paper" systems.

None of the Commission's proposed spectrum band plans is sufficient to accommodate reasonably a policy of licensing all nine 2 GHz MSS applicants for the spectrum requested in their applications. However, the Commission can and should engineer a solution, and thereby avoid auctions. The Commission has recognized that auctions for global MSS spectrum are untenable, and, therefore, it cannot reasonably adopt a competitive bidding procedure.

Ideally, the Commission should adopt an "all shared band" plan. Pursuant to such a plan, each licensee would be required to share the 35 MHz of spectrum in each direction with all other licensed systems by adopting a sharing system design. This band plan achieves the Commission's goal of licensing all systems, and increases the potential for competition. It provides certainty for each system because each licensee has access to 35 MHz of spectrum in each direction. It ensures that each system can use the entire spectrum to maximum capability to provide MSS to consumers. In the event that one or more systems do not progress, no band segment will lie fallow as a result of a system not going forward.

The Commission's proposed "flexible band plan" and "negotiated entry arrangement" have specific flaws that make them untenable. In the event the Commission does not adopt the "all shared band" plan, then it should adopt a version of its "traditional band plan" which carves out small spectrum segments for those systems that cannot share.

There appears to be sufficient feeder link spectrum available for all licensed 2 GHz MSS systems. The Commission should allow the applicants to amend their feeder link requests once the band plan for the service link frequencies is known. Applicants are in the best position to take account of the amount of bandwidth available, number and location of earth stations for each system, and the availability of their desired feeder link spectrum.

The Commission's proposed regulatory classifications for 2 GHz MSS appear correct. The provision of space segment by MSS licensees should be treated as non-common carriage. Service to end users should be classified based on the nature of the service.

The proposed blanket licensing scheme for MSS is appropriate. The Commission should offer 2 GHz MSS licensees a 20-year license term based on the investment in the system and the desire to encourage innovation. The Commission must make clear that the blanket license includes the right to communicate with satellites after launch for orbit-raising and system testing purposes. Also, replacement satellites and spares should be deemed "technically identical" if they do not change the interference environment of the original system.

Stringent implementation milestones should be adopted for 2 GHz MSS systems. The Commission should include in these milestones reporting requirements for executing agreements for satellite manufacturing, earth station construction, and satellite launch as well as for completion of a critical design review. Only by monitoring progress closely can the Commission be assured that

licensees move forward with implementing a system to use spectrum to serve the public.

The Commission should adopt its proposed policies on reporting requirements, distress and safety communications, exclusionary arrangements, and mobile earth station licensing for 2 GHz MSS. However, it should not impose Enhanced 9-1-1 requirements on 2 GHz MSS systems, mandate specific service levels for rural and underserved areas, or adopt in this proceeding a policy on orbital debris. It should attempt to coordinate the "all shared band" plan globally.

With respect to intersystem coordination, the Commission should adopt emissions limits in the 1559-1605 MHz band proposed in a separate proceeding for Global Mobile Personal Communications by Satellite systems. For other standards, the Commission should require compliance with ITU-R M.1343 and ETSI TBR-42 rather adopting specific U.S. technical standards. The global market for MSS will dictate that U.S. GMPCS systems comply with these standards, and, therefore, it would promote the deployment and free circulation of 2 GHz MSS terminals for the Commission simply to adopt these existing standards.

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COMMENTS OF GLOBALSTAR, L.P.

Pursuant to Section 1.415 of the Commission's Rules, Globalstar, L.P., hereby submits these comments on the proposed rules and policies for the Mobile-Satellite Service ("MSS") in the 1990-2025/2165-2200 MHz bands ("2 GHz").[1] Globalstar is one of nine applicants for spectrum assignments in the 2 GHz frequency bands, and, therefore, has a substantial interest in the licensing and service rules adopted in this proceeding.[2]

The Commission recognizes in the NPRM that 2 GHz MSS licensees "will enhance competition in mobile satellite and terrestrial communications services, and complement wireless service offerings through expanded geographic coverage." (NPRM, ¶ 2.) Globalstar supports the Commission's efforts to develop competitive

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[1] See Notice of Proposed Rulemaking, FCC 99-50 (released Mar. 25, 1999) ("NPRM").

[2] File Nos. 182-SAT-P/LA-97(64) and 183 through 186-SAT-P/LA-97; see NPRM, note 18.

MSS services in the United States and globally. It also recognizes the difficulties of so doing in this context. For example, the nine applicants have requested access to more spectrum than is available in the 2 GHz MSS allocation; there are complicated and unresolved issues related to relocation of terrestrial incumbents in the MSS bands;[3] and, the frequencies allocated for 2 GHz MSS in the United States are not the same as those allocated globally.

These issues primarily affect the licensing of 2 GHz MSS systems. Once licenses are issued, the number and diversity of system proposals indicate that there is potential for robust competition among MSS service providers in both domestic and international markets. Indeed, the Commission itself argues in the NPRM (¶ 75) that a competitive market exists, or is about to exist, for MSS in the United States.

Therefore, although substantial attention is needed at the outset to ensure that the proposed 2 GHz MSS systems have the opportunity to compete fairly in the marketplace, the Commission should favor policies that promote market-based solutions in the post-licensing environment for MSS. In short, the rules and policies for 2 GHz MSS should allow market forces, rather than regulation, to guide service offerings; only those rules and policies clearly necessary to promote competitive MSS at 2 GHz should be adopted.

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[3] See Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service, 12 FCC Rcd 7388 (1997), on recon., 14 CR 501 (1998).

I. THE COMMISSION'S PROPOSED QUALIFICATION REQUIREMENTS FOR 2 GHZ MSS ARE IN THE PUBLIC INTEREST.

Globalstar supports the Commission's proposed technical requirements for 2 GHz MSS systems and its proposal not to mandate a financial qualification standard for these applicants.

A. Both GSO and NGSO Systems Can Be Licensed Within the 2 GHz MSS Spectrum.

The Commission should allow both geostationary ("GSO") and nongeostationary ("NGSO") systems access to the 2 GHz spectrum. (NPRM, ¶ 17.) In other proceedings, the Commission has been concerned about the ability of GSO and NGSO systems to share spectrum co-frequency.[4] However, in this case, that concern is partially eliminated by the availability of both global and regional spectrum in the bands allocated for 2 GHz MSS. As the Commission has recognized (NPRM, ¶ 28), this allows for a split of potential spectrum assignments between global NGSO and regional GSO systems. Moreover, there are interference mitigation techniques which can be used to allow NGSO-GSO sharing, including, polarization diversity and spread spectrum power control. Therefore, there is no need to ban one or the other orbital height, and the Commission should authorize both GSO and NGSO satellites to provide 2 GHz MSS.

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[4] Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile-Satellite Service in the 1610-1626.5 MHz/2483.5-2500 MHz Frequency Bands, 9 FCC Rcd 5936, 5946 (1994) ("Big LEO Rules Order").

B. The Commission Should Adopt the Proposed Coverage Requirements for 2 GHz MSS.

Globalstar supports the proposed geographic coverage requirements for 2 GHz MSS systems. (NPRM, ¶¶ 18-19.) At a minimum, 2 GHz NGSO systems should be capable of serving locations as far north as 70° North Latitude and as far south as 55° South Latitude for at least 75% of every 24-hour period. As with Big LEO systems, this standard provides coverage for most of the populated areas of the world.

The Commission's proposal for U.S. coverage for NGSO systems should also be adopted, i.e., that at least one satellite is visible above the horizon at an elevation angle of at least 5 degrees at all times throughout the 50 states, Puerto Rico, and the U.S. territories and possessions. Similarly, GSO satellites should be required to serve the entire United States, Puerto Rico and U.S. territories and possessions, unless technically infeasible. However, for those systems employing both GSO and NGSO satellites, the coverage requirements should be measured on a per system basis. Requiring that all systems meet these design requirements will encourage all systems to maximize use of the spectrum to serve domestic markets.

C. The Commission Should Not Authorize AMS(R)S in the 2 GHz MSS Spectrum.

Globalstar supports the Commission's decision to retain the 2 GHz MSS band for generic MSS. (NPRM, ¶¶ 20-22.) Specifically, the Commission should not provide for an allocation of spectrum for Aeronautical Mobile-Satellite (Route) Service ("AMS(R)S") nor adopt technical standards supporting AMS(R)S in these

bands. Allowing AMS(R)S in the 2 GHz MSS allocation is inconsistent with the allocation and would not serve the public interest in optimal use of the spectrum for MSS.

As the Commission recognizes, there is no allocation, footnote or other condition in the International Table of Frequency Allocations or U.S. Table of Frequency Allocations recognizing the provision of AMS(R)S, a safety service, in these bands. The decision not to specify the nature of mobile-satellite offerings in these bands represents a consensus among the international community to permit 2 GHz MSS systems the full range of commercial services. Were an AMS(R)S service to require restrictions for priority and pre-emptive access as a safety service in these bands, the capability of other systems to provide MSS would be impaired to the extent necessary to accord such priority.[5]

Moreover, the Commission has decided that 2 GHz MSS systems should compete with Big LEO and other MSS systems by offering the full array of satellite services. (NPRM, ¶ 2.) To design 2 GHz systems to ensure priority and pre-emptive access for an AMS(R)S service in these bands would undermine this goal. None of the other MSS systems must protect AMS(R)S within a band allocated for MSS alone.

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[5] See, e.g., 47 C.F.R. § 2.106 (allocation for AMS(R)S at 1545-1549.5/1646.5-1651 MHz); AMSC Subsidiary Corp., 4 FCC Rcd 6041, 6054-55 (1989) (subsequent history omitted).

Boeing is the only applicant seeking to provide AMS(R)S. (NPRM, ¶ 20.) Globalstar has no objection to permitting Boeing to provide AMS(R)S in these bands as long as it seeks no extraordinary protection for the service within the intrasystem coordination requirements that are adopted for the spectrum it shares with other licensees. In keeping with a market-based approach to 2 GHz satellite services, each system should have the flexibility to provide the services it deems marketable as long as the parameters of the intrasystem coordination process apply equally to all and give no one system any particular advantage to accommodate a specialized service.

D. The Commission Should Not Impose a Financial Standard on 2 GHz MSS Applicants.

The Commission should not impose a financial standard for the first processing round of 2 GHz MSS applicants.[6] The existing standard is not based on sufficient real-world criteria to have the desired effect in this proceeding of identifying with a degree of certainty those applicants that will realize their proposals. Although when first devised, the standard may have reflected the realities of satellite financing by large corporate applicants, currently, obtaining funding for the billions of dollars needed to construct, launch and place a satellite

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[6] In the NPRM (¶ 25), the Commission stated that, if a financial standard were applied, applicants would be required to "demonstrate internal assets or committed financing sufficient to cover construction, launch, and first year operating costs of its entire system." The Commission proposed to use the existing standard set forth in Section 25.140(c), but that standard may not be adequate if such a requirement is imposed on the 2 GHz applicants.

system into operation is a significantly different venture. The 2 GHz MSS applicants must have sound financial plans, not mere assets, and the plans may stretch over a period of years before all the necessary funding has been obtained. Whether financing is forthcoming depends upon many factors, including the financial standing and past success in the marketplace of a system's proponents, the strength of the business plan, the quality of the system design and engineering, and actual progress toward construction. None of these critical features of a financing plan is accounted for in the Commission's standard. Furthermore, it would be difficult for the Commission to conduct the searching review and analysis necessary to make the financial qualification standard reflect these meaningful elements.

Moreover, the standard as written is not consistent with the Commission's goals in this proceeding. Many years ago, the Commission devised a simple financial standard, which was useful to ensure that the spectrum was assigned to an entity with real potential to provide service to the public.[7] Now, satellite services are generally available, and the Commission's focus is facilitating competition. In this proceeding, the Commission is taking great pains to license as many and as diverse a group of competitors as is feasible. If a financial standard is deemed necessary, the Commission should adopt one designed to ensure

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[7] See Big LEO Rules Order, 9 FCC Rcd at 5948 (goal of financial standard was to ensure an undercapitalized applicant does not preclude a fully capitalized applicant from providing service to the public); Licensing Space Stations in the Domestic Fixed-Satellite Service, 58 RR 2d 1267, 1271 (1985).

competition, rather than one directed at weeding out all but fully capitalized applicants.

In any event, for the past several years, the Commission has not applied its own financial standard as long as it has found spectrum available for an applicant.[8] It is thus difficult to envision the Commission using the financial standard as a basis for disqualifying applicants when, as here, it tentatively finds that there is spectrum available for all applicants. If the Commission's goal is to identify systems that ultimately will provide service to the public, the Commission should enforce stringent implementation milestones that require systems to build without delay, rather than adopt financial standards that may easily be subverted.[9]

II. THE BAND PLAN FOR 2 GHZ SHOULD MAXIMIZE USE OF THE SPECTRUM AND FLEXIBILITY FOR LICENSEES.

In the NPRM, the Commission sought comment on four different methods of assigning spectrum to the nine 2 GHz MSS applicants. Globalstar believes that none of the four plans adequately accommodates the Commission's objective of licensing all nine applicants. There is simply too little spectrum for all nine systems to obtain the bandwidth which they requested, and presumably need, in the near term. However, the Commission can engineer a solution by requiring each

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[8] See Teledesic Corp., 12 FCC Rcd 3154 (Int'l Bur. 1997); Mobile Communications Holdings, Inc., 12 FCC Rcd 9663 (Int'l Bur. 1997); Constellation Communications, Inc., 12 FCC Rcd 9651 (Int'l Bur. 1997). Globalstar has opposed the Commission's waivers of its own financial requirements.

[9] See infra text at § VI.

system to modify its request, keeping in mind that it is very unlikely that all nine systems will become operational.

Globalstar thus supports the use of an "engineered" solution for assigning spectrum. But, the Commission must not adopt an inflexible plan which results in some spectrum lying fallow while some operational systems do not have sufficient spectrum to meet market demand.[10] As discussed below, Globalstar believes that the simplest approach to assigning spectrum offers more flexibility, and, that band plans requiring substantial regulatory attention do not serve the interests of licensees, particularly in the pre-operational stages, or of the public in effective use of the spectrum.

A. The Commission Should Require All Systems to Share the Available Spectrum by Use of Sharing Designs.

With nine applicants for the 2 GHz spectrum, there are three very basic issues that any useful band plan must address: (i) providing each system with sufficient spectrum to move forward with its business plan; (ii) optimizing the use of 2 GHz MSS spectrum for service to consumers; and (iii) ensuring that spectrum does not lie fallow awaiting launch of "paper" systems. The Commission's various proposed band plans exacerbate rather than solve these problems, in part because

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[10] The Commission must also consider whether to modify its proposed policies for the lower L-band (1525-1544/1626.5-1645.5 MHz) to allow applicants for 2 GHz spectrum to use that spectrum and thereby increase the spectrum available for assignment to these nine applicants. See Establishing Rules and Policies for the Use of Spectrum for Mobile Satellite Service in the Upper and Lower L-Band, 11 FCC Rcd 11675 (1996).

they propose to elevate individual choice of system design over the public interest in efficient and optimal use of spectrum.

For example, the Commission proposes to segment the band into small 1.25 MHz or 2.5 MHz segments assigned to each applicant. Such segments are simply two small to establish a business plan and obtain financing for next generation MSS systems.[11] Were a system designed to use this small amount of guaranteed spectrum, it would require multiple frequency reuse plans to achieve a sufficient level of capacity, increasing the cost and complexity of the system.[12]

Also, the Commission proposes to license all nine applicants without regard to their ability to construct, launch and operate a satellite system and with very ineffectual implementation milestones. With no procedure for weeding out "paper" systems, or recapturing their assigned frequencies, now or in post-licensing near future, spectrum would inevitably lie fallow. Or, it would effectively lie fallow

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[11] For example, the proposed spreading bandwidths for the IMT-2000 terrestrial CDMA standards are greater than 2.5 MHz (i.e., for W-CDMA, 4.09 MHz, and for CDMA-2000, 3.68 MHz). If an MSS system desired to be compatible with the terrestrial component of IMT-2000, it would need to have available spectrum segments of at least this size. To increase capacity through frequency reuse, a system would need preferably three segments of that bandwidth.

[12] If such small bandwidth assignments were made, a system would have to significantly increase the number of antenna beams and decrease the size of the beams on the satellite to increase frequency reuse to achieve capacity equal to or greater than an MSS Above 1 GHz system. There would be a corresponding increase in size and cost of the antenna, assuming that a satellite with an antenna of the size necessary would be feasible.

because a "reservation" of spectrum for a paper system reduces the available spectrum that real systems can rely on for their business and/or financial planning.

The proposed band plans reflect the Commission's efforts to treat all applicants fairly and to promote competition at 2 GHz MSS. But, spectrum at 2 GHz is too scarce to consider assigning each applicant its own small, albeit guaranteed, segment to do with as it pleases. Such plans are inherently spectrum inefficient and unwieldy to promote on a global basis.

Accordingly, the Commission should take the opposite perspective. That is, all systems should be assigned all spectrum to be shared through coordination. No system would be assigned exclusive spectrum unless, of course, it can convince all other systems that it should receive exclusive frequencies. Therefore, all systems would be required to implement a sharing design.[13]

This "all shared band" arrangement offers many benefits.

- It achieves the Commission's goal of licensing all systems, and thereby increasing the potential for competition at 2 GHz MSS.
- It provides certainty for each system because each licensee has access to 35 MHz of spectrum in each direction.
- It ensures that each system can use the entire spectrum to maximum capability to provide MSS to consumers.
- In the event that one or more systems do not progress, no band segment will lie fallow as a result of a system not going forward.

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[13] The Commission has previously imposed an "all shared band" plan where there were multiple applicants for a modest amount of spectrum and the Commission desired to ensure multiple entry. See Radio-Determination Satellite Service, 60 RR 2d 298 (1986).

- Those systems that operate globally will have more flexibility in obtaining spectrum assignments from other administrations.
- This plan also has the effect of encouraging systems to progress steadily toward launch and operation, because delay increases the complexity of coordination for later-launched systems.

To implement this plan, the Commission should require licensees to coordinate with each other initially to determine basic system parameters for sharing the 2 GHz spectrum.[14] Then, as each system is ready to initiate service, all operational systems should be required to coordinate with the new system to assure optimal service for all systems. Although this plan does not necessarily permit each system to choose its own system design, it does maximize the benefits of MSS for consumers. As discussed below, the Commission's other proposed band plans do not achieve the same level of benefits. In this era of spectrum scarcity and more applicants than bandwidth, the public interest in service should take precedence over private interests in system design.

B. The Commission Should Adopt a Band Plan Which Avoids the Use of Auctions.

As its fourth option for assigning spectrum, the Commission proposes to auction the 2 GHz spectrum in paired 1.25 MHz segments. (NPRM, ¶ 46.) Globalstar generally opposes the use of auctions in the context of global MSS spectrum because of the potential for serial, international auctions and the

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[14] This plan differs from the negotiated entry plan because it is premised on all systems modifying their designs to adopt a sharing architecture.

consequential adverse impact on global satellite systems attempting to obtain authorizations in each country where they desire to provide service.

In addition, here, the Commission has not established the jurisdictional requirements to use competitive bidding. The Commission's authority to use competitive bidding for spectrum licensing is limited to those situations in which "mutually exclusive applications are accepted for filing for any initial license or construction permit which will involve a use of the electromagnetic spectrum." 47 U.S.C. § 309(j)(1). In this proceeding, the Commission has found that "there is sufficient spectrum in the 2 GHz MSS allocation to accommodate reasonably all nine 2 GHz MSS system proposals." (NPRM, ¶ 26.) If the Commission has found that all nine 2 GHz applications can be granted, it is not clear how the Commission can also rationally find that they are "mutually exclusive" and thereby subject to auction.

The Commission notes that the nine applications cannot be granted for as much spectrum as each applicant requested. (NPRM, ¶ 26.) However, the Commission is obligated by statute to use engineering solutions to avoid mutual exclusivity where possible. 47 U.S.C. § 309(j)(6)(E). The Commission has proposed three engineering solutions to mutual exclusivity, and Globalstar has proposed another, at least one of which can accommodate all applicants. Therefore, the mutual exclusivity requirement for implementing competitive bidding for 2 GHz MSS is not present.

Even if the nine 2 GHz MSS applications were deemed mutually exclusive, it is the Commission's explicit policy not to use competitive bidding to award licenses for global satellite systems. In its recently published regulatory guide, "Connecting the Globe,"[15] the Commission points out that auctions for global spectrum are feasible only if they are conducted as "coordinated, multinational auctions" to address the "interdependency between national licensing decisions and international provision of service." The Commission notes that such "multinational auctions would raise problems of investment of time and resources, raise issues such as national sovereignty and access that could delay service." The Commission concludes that such auctions should be avoided in favor of negotiations among the systems and engineering solutions.[16] The Commission makes the same findings in the NPRM (¶¶ 9-10). In short, the Commission has recognized that there exist significant inequities in using auctions for licensing global satellite systems and that a multinational process is needed to conduct such auctions properly, a process that does not now exist. These findings dictate that auctions must not be used for the 2 GHz MSS spectrum assignment process.

C. The Commission Should Abandon the Flexible Band Plan.

The Commission's first and apparently favored approach for 2 GHz MSS spectrum assignments is the so-called "flexible band arrangement." (NPRM, ¶ 31.)

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[15] Connecting the Globe: A Regulator's Guide to Building a Global Information Community (Washington, D.C. 1999).

[16] Id. at VII-8.

Pursuant to this plan, the available spectrum would be divided into three "core" segments for GSO systems, NGSO TDMA systems and NGSO CDMA systems. Within the appropriate core, each system would receive priority access to a "primary spectrum segment" of 2.5 MHz in each direction. There would be two "expansion" spectrum segments between the core segments which systems could use "conditioned upon coordination with other systems permitted to expand in that band (i.e., systems with commercial operations in the same or adjacent core bands) – and only after a system's customer traffic requirements grow beyond the capacity of the primary spectrum segment and the core spectrum band." (NPRM, ¶ 33.) According to the Commission, this approach provides a flexible structure for system operators to adapt to system growth and market demands, while creating certainty to proceed with system implementation. (NPRM, ¶ 39.)

Globalstar generally favors policies that allow market forces to ensure optimal use of scarce spectrum. However, the flexible band proposal is flawed in a number of respects, and should be abandoned.

First, the Commission erroneously believes that 2 x 2.5 MHz is sufficient guaranteed spectrum for the business plans of all applicants. It is not sufficient spectrum to develop a realistic business plan, obtain financing, and attract investors and service providers.[17] Although there is potential for expansion, the

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[17] The Commission's suggestion that it would assign systems proposing to use both CDMA and TDMA technologies even smaller segments from each of the two "core" bands makes this approach even less tenable from a business and operational perspective. (See NPRM, ¶ 34.)

disadvantages of only having "potential access" to spectrum when seeking financing outweigh the benefits of having access to more spectrum many years hence when subscribership increases.

Second, the uncertainty of the flexible band plan is unacceptable. Global MSS spectrum is scarce, and "reserving" spectrum for the expansion segments simply makes the spectrum even more scarce and the spectrum assignments smaller for each licensed system. If this plan were in use, a system could not determine how much spectrum would be available to it until it became operational. But, the developmental stages of a satellite system are the time when it is most important to have a high degree of certainty regarding its technical capabilities. Uncertainty would interfere not only with central design decisions, but also with the ability to secure financing, to complete international coordination, and to attract service providers in other countries for several years.

Third, the flexible band plan requires yet another proceeding to award access to the expansion spectrum, which is likely to be long, expensive and ultimately crippling to licensees. The Commission states that access would be based on traffic and need, but it is not clear what standards would be used to determine need. If, for example, all operational systems would qualify, there is no benefit to reserving the spectrum. If a system would not qualify, then it runs the risk of spending billions of dollars in anticipation of having access to additional spectrum beyond the core, only to discover that its access to spectrum is limited. While it may be possible devise a mechanism to account for market-based adjustments, there is too little

spectrum at issue and too significant an up-front expenditure to place so much reliance on evaluation of need.

The Commission has also erroneously assumed that TDMA systems require exclusive spectrum and only CDMA systems can share spectrum. As a result, it creates inviolate divisions of "core" spectrum and proposes that systems using both architectures would have to receive split core spectrum, some from each of the cores for TDMA and CDMA systems. (NPRM, ¶¶ 34, 36.) Studies conducted by Globalstar suggest that properly designed TDMA systems may well be able to share spectrum with other TDMA and CDMA systems. Therefore, premising the flexible band plan on an inviolate CDMA/TDMA distinction may stifle innovative technology and create potential inefficiencies in the use of spectrum. If the Commission pursues the flexible band plan, at the least, it should devise a segmentation plan based on systems requiring shared or unshared spectrum and should place a burden of proof on applicants claiming that TDMA systems necessarily require exclusive spectrum.

D. The Commission Should Not Mandate the Negotiated Entry Approach for Spectrum Assignments.

One of the Commission's proposed alternatives is a "negotiated entry" approach whereby all applicants would be granted licenses and then required to negotiate with other licensees to develop a band plan for use of the spectrum. (NPRM, ¶ 40.) The negotiation could be conducted prior to any system becoming operational or seriatim as each system becomes operational. Although this plan

could potentially conserve resources by not assigning spectrum to systems which fail, there are several reasons why this approach is not feasible.

For negotiations conducted seriatim, as the Commission itself recognizes, there is very little incentive for operational systems to negotiate in good faith with newly-launched systems. Once operational, a licensee no longer has the same incentive that later launched systems would have, and, therefore, would be reluctant participants in any division of spectrum for new competitors. As the Commission recently pointed out, its experience is that "the incumbent carrier will fiercely and frequently oppose decisions that open the market to competition. The incumbent carrier is likely to challenge decisions throughout the regulatory processes, in the courts, and in the marketplace."[18] There is no reason to believe that the Commission's observation would not prove true in these circumstances where an operational system would become an incumbent.[19]

Moreover, even if all MSS systems are licensed across the entire band, and all systems are "frequency agile," the coordination process conducted seriatim is likely to result in a hodgepodge of assigned frequencies that would not necessarily produce the optimal use of spectrum because each system would want to retain its proposed design. Aggregation of spectrum for sharing by systems that can do so

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[18] Connecting the Globe, at I-6.

[19] Adding a negotiation requirement as an explicit condition of the license does not solve the problem. Any licensee can exploit the existing regulatory process through entirely legitimate means to forestall competition for a lengthy period of time.